TCRA FOR THE EXPERIMENTAL SHIP SHIELDING RANGE
BCT MEETING, FEBRUARY 23, 2012

Outline Shielding Range

- Background
- Summary of Planned Work
- Schedule
- Draft Action Memorandum RTC

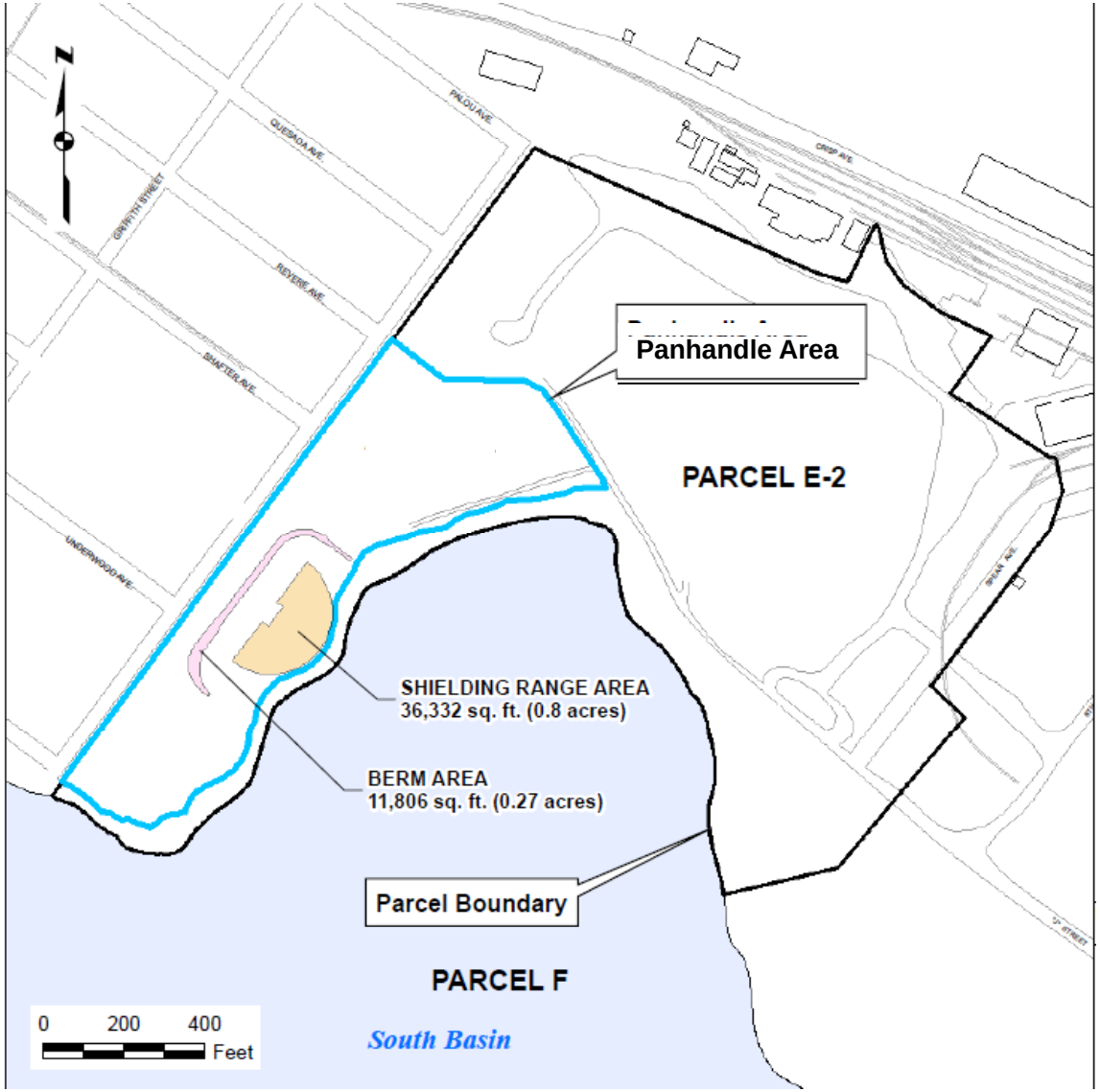
Experimental Ship Shielding Range Background

- Identified in HRA as “Experimental Shielding Range” “South Gate Range”
- open field area in the Panhandle
- TCRA “driver”: cobalt-60
- ROCs: co-60, cs-137, ra-226, sr-90
- Phase V Radiological Investigation covered the area of the Shielding Range

Shielding Range looking northeast, berm in background

1961 Aerial of Project Area - Parcel E-2

Panhandle Area Parcel E-2



Summary of Planned Work

- Pre-characterization of berm and fan-area for waste profiling
- GWS for identification of discreet radiological sources
- Excavate berm and fan-shaped area in 1-foot lifts in between GWS
- Remove approx. 3,200 bank cy and radiologically screen soil
- Work falls under Explosive Safety Submission (ESS) for Parcel E-2
  - MPPEH construction support to be provided
- Use existing PCB Hot Spot RSY pads
- If soil meets radiological release criteria and HPNS backfill criteria, it will be returned to Shielding Range site as fill material
- Final Conditions Survey of Shielding Range footprint and buffer area
- All radiological samples to be analyzed in HPNS onsite laboratory

Schedule

Activity	Date
Commence Field Work and Radiological Soil Screening	May 2012
Complete Backfill and Site Restoration	Aug 2012
Demobilize	Aug 2012
Submit Draft Removal Action Completion Report for Regulatory Review	Nov 2012

Action Memorandum Categories of Comments

Due date for comments: 13 February, 2012

Comments received from: EPA, DTSC, DFG, RWQCB, City/Lennar (no comments)

Comments still outstanding: CDPH

General categories of comments:

1. Request for supplemental information regarding site characteristics
2. Improve organization of previous investigations and actions and how they relate to the Shielding Range TCRA
3. Include all radiological release criteria in the AM (Table 1), not only cobalt-60

Action Memorandum
Categories of Comments (continued)

General categories of comments (continued):

1. Contribution to remedial performance - How does the Shielding Range TCRA relate to Parcel E-2 ROD?
2. Further clarification needed regarding step-out rules and plan for addressing potentially residual contamination
3. How will potential releases to the Bay be prevented
4. Revised cobalt-60 release criterion – ongoing discussions
5. ARARs – to be further addressed at upcoming BCT meeting

Action Memorandum RTCs
Site Characteristics

EPA (comment 2)

- The EPA AM Guidance indicates that land use, population, surrounding the site, and distance to schools be included – information is included for Parcel E-2 but not for the Shielding Range
- Please include a discussion on meteorological contributions, sensitive populations, habitats, natural resources, historical or cultural issues for the Shielding Range

DTSC (comment 1)

- Please include an approximate size (acres) of the Shielding Range

Navy Response

- Section II.A Physical Location and Site Characteristics was reviewed and supplemented with information regarding land use of the immediately adjacent area. Information regarding Bayview population within a close distance to HPNS, distance to nearest school and business, meteorological contributions and information about potentially threatened or protected species was included in the AM.
- Further information regarding historical and/or cultural issues associated with Shielding Range was included in Section II.A Site Characteristics. No cultural/archeological resources have been indentified for the Shielding Range site.
- A sentence stating that the total size of the Shielding Range is 1.1 acres was included.

Action Memorandum RTCs
Site Characteristics

DTSC (comment 2)

- Please provide additional details and historic information regarding the more specific Area A and B locations. Please clarify why these areas have been specifically designated as separate stand-alone areas within the site.

Navy Response

- Very little is known of the actual experiments conducted at the Shielding Range location. Upon close review of a 1960 Navy As-built, three separate locations were called out as Areas A, B and C. As part of the development of this AM, it was established that area A comprised the fan-shaped area; and areas B and C were separate features (HRA reference HPS-HRA-4506). The naming convention will be corrected on Figure 2 of the Final AM.
- There is no known reference available that verifies the use of Areas A, B and/or C. The as-built depicts that Area A was covered with 6" of base course (no seal coat) and that Areas B and C were constructed with 6" base course with seal coat. The as-built also labels the Area B as "Instrumentation Area". No further details as to the use of Area C is offered. A shed appears to have been placed next to Area C. There is no physical trace of these areas or base course left in the field today.
- Additional text regarding what is known for areas A, B, and C was incorporated into the AM.

Action Memorandum RTCs
Site Characteristics

EPA (comment 3)

- When describing the site operational history, please indentify if the HRA identified the (i) plastic tubing that contained the cobalt-60 material (ii) the location the years of operation; (iii) site topography and drainage pathways during years of operation

Navy Response

- Very little is known of the actual experiments conducted at the Shielding Range location. Upon close review of a 1960 Navy As-built, there are no details regarding the exact location of the plastic tubing that was used for the research or the Shielding Range Site topography or drainage pathways.
- Additional text to establish that available information about the use of the Experimental Shielding Range is sparse was included in Section II.A. 3. Site Characteristics.

Action Memorandum RTCs
Reorganize "Previous Action" Section

EPA (comment 5)

- Section II.B.1. Previous Actions - It is unclear what radiation surveys included the Shielding Range site. It would be helpful to specify which actions did not take place in the immediate vicinity of the site and or the distance between the investigation and/or action and the site

DTSC (comment 3)

- Section II.B.1. Previous Actions - It is not always clear how each of the investigations and removal actions relates specifically to the Shielding Range site. Please consider adding information relevant to the Shielding Range site should be added or delineated more specifically, if available, for each of the bullet items

Navy Response

- The listed investigations and actions were rearranged to specify which investigations and actions covered the immediate area of the Shielding Range. These included Phase V Radiological Investigation and the Metal Slag Area removal action
- The previous listed surface radiation surveys and investigations were separated and summarized under a separate paragraph listing actions relevant to the Panhandle Area. The distances to the Shielding Range from these removal actions were also included.

Action Memorandum RTCs Include Release Criteria for All ROCs

RWQCB (comment 1, 3)

- It is stated that soil sample results will be compared against the criteria listed in Table 1. Table 1 only includes release criteria for cobalt-60, and therefore it is unclear how/if other ROCs or COCs will be sampled, and what criteria will be used to determine appropriate handling/management/disposal... It may be helpful to expand Table 1 to include release criteria for all ROCs.

EPA (comment 6)

- Since the discussion of the Release or Threatened Release includes cesium-137, radium-226, and strontium-90, in addition to cobalt-60, these other radioisotopes have been found in Parcel E-2, and it is unlikely that soil containing devices or radiological contamination will be left in place if found, the release criteria for these radioisotopes should be added to Table 1...Adding these additional ROCs to Table 1 will be consistent with the current text on page 15 which states that soil samples will be analyzed for all four radioisotopes and compared to the criteria listed in Table 1.

Navy Response

- The release criteria for all ROCs (including cobalt-60, strontium-90, cesium-127, and radium-226) were added to Table 1 for clarity.

Action Memorandum RTCs
Relation to Future Remedial Action

EPA (comment 6)

- The relationship of this AM to the future Parcel E-2 ROD and remedial action is not clear. The document ... states that radiological contamination identified at the 1 ft bgs level will be left in place having been identified as a "hotspot". How is this consistent with the Parcel E-2 Proposed Plan which states that "hotspots" within the panhandle will be excavated before the cover and the wetland reconstruction takes place? Leaving radiological contamination in place also seems inconsistent with the preparation of a final MARSSIM survey.

RWQCB (comment 4)

- Following completion of site activities, the Shielding Range area will be developed into tidal and freshwater wetlands. Please describe how the TCRA will support the wetlands design plan. Creating tidal or freshwater wetlands typically requires grading to establish elevations necessary for wetlands hydrology and vegetation success. It seems there would be potential for any materials containing ROCs or COCs left in place and covered with backfill during the TCRA, to be exposed during wetlands creation, leading to an exposure risk. How will this be addressed? ...

Action Memorandum RTCs
Relation to Future Remedial Action

Navy Response

- The purpose of this TCRA is to remove cobalt-60 at levels above the release criterion within the footprint of the Shielding Range and buffer areas.
- By excavating soils within the Shielding Range, other ROCs present within the Ship Shielding area will also be removed; however, non cobalt-60 ROCs that fall outside the footprint will not be addressed during this limited TCRA.
- A Final Conditions Survey (FCS)[consistent with MARSSIM guidelines for Final Status Surveys (FFS)] will be conducted; and a FCS package will be prepared as part of the RACR. The FCS will document as-left-conditions to be taken into consideration during the remedial action (including wetlands construction) at Parcel E-2.
- Additional removal of ROCs that may be required for wetlands construction will be done during the remedial action of Parcel E-2.

Action Memorandum RTCs
Plan for Potentially Residual Contamination

DTSC (comment 5)

- The maximum excavation depth proposed will be 1-ft bgs even if residual radioactivity remaining exceeds the 60Co radiological release criteria based on confirmation soil samples/scan data. After "hot spots" are documented...how will these locations be addressed in the future?

RWQCB (comment 1, 3)

- I. Purpose and II.A.1. Removal Site Evaluation: These sections state that cobalt-60 is the only radionuclide of concern (ROC) that drives this TCRA and that the other ROCs (cesium-137, radium-226, and strontium-90) and contaminants of concern (COCs) will be addressed in the final remedial action selected in the Parcel E-2 Record of Decision (ROD). It is not clear how the other ROCs or COCs present in the excavated soil, or detected at 1 ft. bgs, will be handled (i.e., backfilled, left-in-place, or disposed of offsite). What will remain to be addressed in the final remedy?

EPA (comment 6 (f))

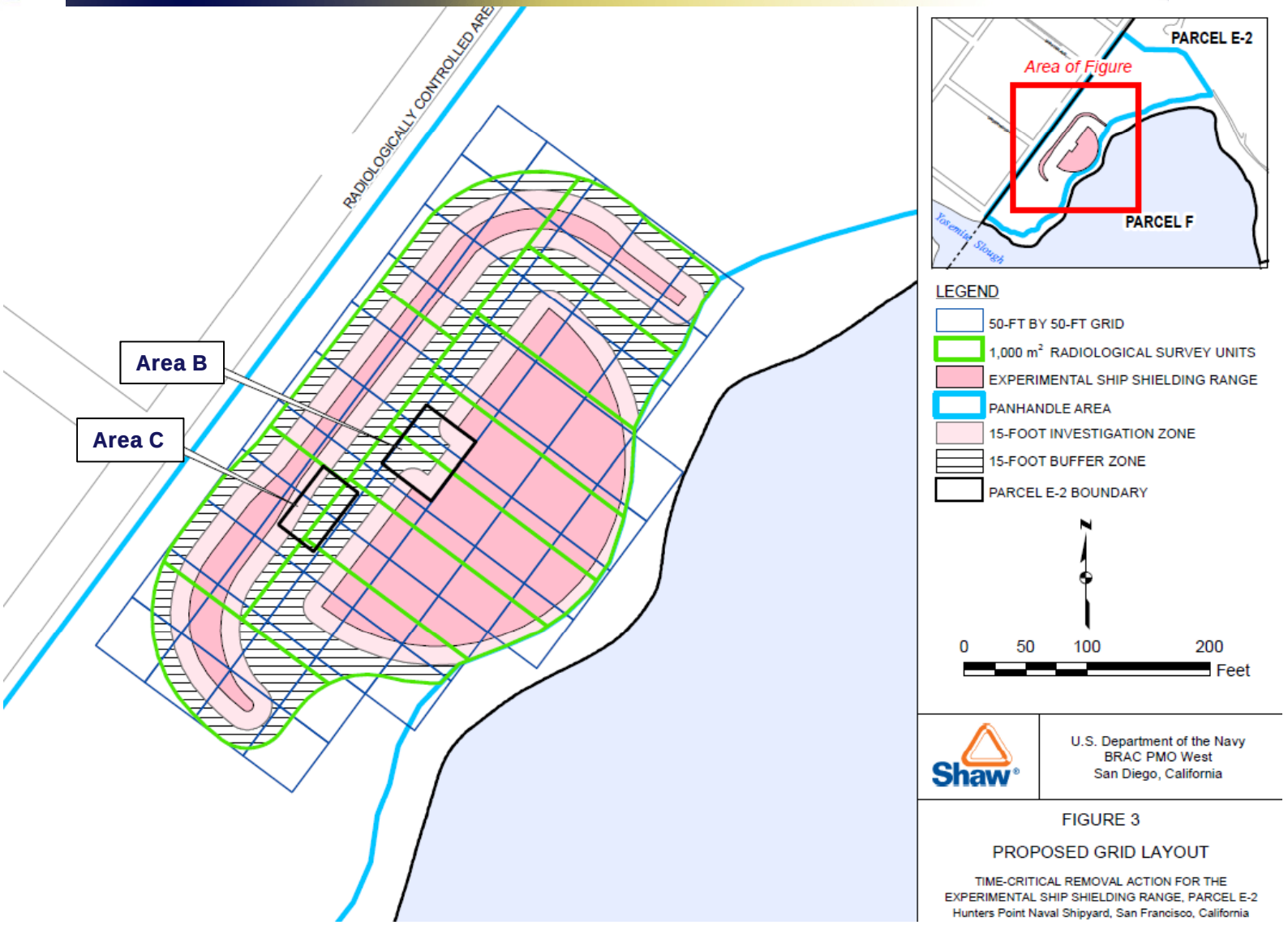
- If confirmation samples require step-out excavation into the buffer zone (shown on Figure 2), will the Navy continue soil excavation/removal or will the Navy suspend work and address any additional cleanup work under the Parcel E-2 ROD remedial action?

Action Memorandum RTCs
Plan for Potentially Residual Contamination

Navy Response

- Because this is a TCRA for the removal of one site-specific radionuclide of concern (cobalt-60), there are no other contaminants of concern (COCs) or project action limits established in the Action Memorandum for the Shielding Range. Cesium-137, radium-226, and strontium-90 will be cleaned up within the bounds of the Shielding Range to 1-ft bgs in accordance with currently established radiological release criteria (Table 1).
- Cobalt-60 step-outs will be addressed under this TCRA. If confirmation samples indicate presence of any other ROC, this TCRA will address removal of discreet point sources; however, if step-outs for other ROCs extend beyond the buffer zone, they will be documented and the location surveyed.
- A FCS will be conducted to document as-left-conditions. Residual contamination will be addressed in the final remedial action for Parcel E-2.

Action Memorandum RTCs
Plan for Potentially Residual Contamination



Action Memorandum RTCs
Protection against Potential Releases into the Bay

RWQCB (comment 5)

- Please outline the mitigation measures the Navy will prepare to take to prevent releases into the bay, from the excavation and staging areas.

DTSC (comment 5 (d))

- Given the proposed excavation's proximity to the Bay, please provide a brief description of the management procedures that will be implemented in order to control potential releases from the site into the Bay as well as flood prevention during high tides.

Navy Response

- Silt fence, sandbags, strawbales and similar Best Management Practices (BMPs) will be put in place during the field effort.
- The excavation will not be conducted in the intertidal areas of Parcel E-2. The soil will be processed on the RSY pads currently used for the PCB Hot Spot project, which are all located in upland areas of Parcels E and E-2.
- Details will be described in the upcoming Project Work Plan and its supplemental appendices, including a Stormwater Pollution Prevention Plan.

Action Memorandum RTCs
Revised Cobalt-60 Release Criterion

1. Current cobalt-60 release criterion is 0.0361 pCi/g
   a) This criterion presents difficulties for the lab to achieve
   b) Lab MDC generally around 0.03 pCi/g
2. Action Memo proposed a revised cobalt-60 release criterion of 2.3 pCi/g
   a) This is associated with a risk of 9.1×10^{-5}
3. Based on initial input from EPA the Navy has revised the new release criterion to 0.252 pCi/g; which correlates to
   a) A risk of 1×10^{-5}
   b) A dose of 1.67 mrem/year
4. With a release criterion of 0.252 pCi/g, the lab MDC of 0.03 pCi/g would be closer to goal of $1/10^{th}$ of release criterion and would result in a greater confidence in sample results

Questions?